



# FHIR Overview

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## A bit of Standards history

### At the beginning (1987) there was V2

- ❖ A delimiter based message system exemplified with part of complete blood count message below .....

OBX | 2 | NM | | 789-8^RBC^LN | | 4.9 | 10\*6/uL | 4.0-5.4 | N

OBX | 3 | NM | | 718-7^HGB^LN | | 12.4 | g/dL | 12.0 5.0 | N

OBX | 4 | NM | | 20570-8^HCT^LN | | 50 | % | 35-49 | H

OBX | 5 | NM | | 30428-7^MCV^LN | | 81 | fL | 80-94 | N |

V2 to continues to dominate

- ❖ Then there was V3 – an XML based message/document system –which was never successful
- ❖ Then CDA, based on V3 as a document system, which is in use but challenging
- ❖ V2 continues to be mainstay (20-40 billion messages/year)



## History more

- Now we have FHIR –which is the future
  - ❖ It parallels much of V2's organization. V2 has separate segments for the patient, orders, medications, and observations
  - ❖ FHIR does too, but has more
  - ❖ V2 had data types, like structured names (last^First^middle^Suffix^title, etc) coded data
  - ❖ FHIR does too, but goes further and with more precision
  - ❖ FHIR is an API, but can implement a message paradigm like V2 AND a document paradigm like V3



# Overview – of FHIR



## What is it?

- ❖ A set of data structured and designed to store and deliver everything of interest to clinical care and associated activities - billing, research, etc.
- ❖ Foundation is a set of more than a 100 “tables” (objects) called resources
- ❖ Each table contains multiple fields/attributes
- ❖ Fields have an associated data types – like decimal, text, range, address, coded entry, person name
- ❖ Some data types are complicated and made up of other smaller data types (e.g. names, addresses, code entry)
- ❖ It also has profiles and extensions which I will leave to Lloyd to define



## What makes it attractive

- ❑ It is very malleable
  - ❖ It does not specify any particular database technology. Just defines how it should behave
  - ❖ The structured (resources) can be represented in XML, JSON, or RDF triples (maybe even CSV)
- ❑ It dodges the effort of defining *one standard* enterprise model (can't be done) by limiting attention to the key elements (80:20) and allowing users to add things of their choosing as extensions but in a formal and controlled way
- ❑ Encourages the use of specific coding systems like LOINC and UCUM but does not require them



## Why attractive more

- ❑ Available FHIR servers also include hordes of relevant coding systems built in.
- ❑ Has strong buy in from industry and growing support from Federal agencies. ONC is on board. CMS and FDA are feeling the pull
- ❑ It is accumulating the functions of a full-fledged health system
- ❑ Provides a great ecosystem for developing special tools and applications without having to do it yourself
- ❑ Apple Health is built on FHIR (as well as the Meaningful Use coding systems – LOINC, RxNorm and SNOMED CT) and so is the emerging Sync For Science and All of Us research projects

## Still more

- Free, test servers (For those who want to play)  
<http://hapifhir.io/docindex.html>
- SMART on FHIR – an set of FHIR tools and application designed to pull data out of commercial EMRs and do interesting things  
<https://apps.smarthealthit.org/apps/featured/page/2>
  - ❖ Including one of our own tools



### LHC-Forms on FHIR

Lister Hill National Center for Biomedical Communications  
(LHNCBC)

Widget that creates input forms for Web-based medical applications or to integrate into electronic health records.

[View](#)

**Support:** Web   **Designed for:** Clinicians & Patients





## Even more

- ❑ Balloted under ANSI rules as a formal HL7 standard
- ❑ All available at no cost
- ❑ Emerged on a relative shoestring
- ❑ Gorgeous and consistent documentation immediately available online
- ❑ Will explain it further through that documentation



# A walk through the FHIR documentation garden

If you want to walk it yourself here is the URL for the active development version (<https://build.fhir.org/index.html>)

L will take you page. It has interesting information but too much to start. First take a look at the resources and dig into one or two. Click on the 'Resources' button highlighted in orange

NSI Today's Paper US



Current Build

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Getting Started

Documentation

Resources

Profiles

Extensions

Operations

Terminologies

Home

This is the Continuous Integration Build of FHIR (will be incorrect/inconsistent at times). See the [Directory of published versions](#)

## Welcome to FHIR®

FHIR is a standard for health care data exchange, published by HL7®. Note: The continuous build is getting ready for the first release. See [details](#).

### First time here?

See the [executive summary](#), the [developer's introduction](#), [clinical introduction](#), or [architect's introduction](#), and then the [FHIR overview / roadmap & Timelines](#). See also the [open license](#) (and don't miss the full [Table of Contents](#) and the [Community Credits](#) or you can search this specification).

### Level 1 Basic framework on which the specification is built



Foundation

Base Documentation, XML, JSON, REST API + Search, Data Types, Extensions

### Level 2 Supporting implementation and binding to external specifications



Implementer Support

Downloads,



Security & Privacy

Security,



Conformance

StructureDefinition,



Terminology

CodeSystem,



Linked Data

RDF

There are more than 100 resources (think of them as tables with special powers) Check out the terminology resources.

<https://build.fhir.org/resourcelist.html>



### 1.2 Resource Index

FHIR Infrastructure <a href="#">Work Group</a>	Maturity Level: N/A	Ballot Status: Informative
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This page is provided to help find resources quickly. There is also a more detailed classification, ontology, and description. For background to the layout on the see the Architect's Overview.

<b>Categorized</b>	Alphabetical	R2 Layout	By Maturity	By Ballot Status	By Committee
Foundation	<b>Conformance</b> <ul style="list-style-type: none"> <li>CapabilityStatement 3 <b>N</b></li> <li>StructureDefinition 5 <b>N</b></li> <li>ImplementationGuide 1</li> <li>SearchParameter 3</li> <li>MessageDefinition 1</li> <li>OperationDefinition 4 <b>N</b></li> <li>CompartmentDefinition 1</li> <li>StructureMap 2</li> <li>GraphDefinition 0</li> <li>ExampleScenario 0</li> </ul>	<b>Terminology</b> <ul style="list-style-type: none"> <li>CodeSystem 5 <b>N</b></li> <li>ValueSet 5 <b>N</b></li> <li>ConceptMap 3 <b>N</b></li> <li>ExpansionProfile 2</li> <li>NamingSystem 1</li> <li>TerminologyCapabilities 0</li> </ul>	<b>Security</b> <ul style="list-style-type: none"> <li>Provenance 3</li> <li>AuditEvent 3</li> <li>Consent 1</li> </ul>	<b>Documents</b> <ul style="list-style-type: none"> <li>Composition 2</li> <li>DocumentManifest 2</li> <li>DocumentReference 3</li> <li>EntryDefinition 0</li> </ul>	<b>Other</b> <ul style="list-style-type: none"> <li>Basic 1</li> <li>Binary 5 <b>N</b></li> <li>Bundle 5 <b>N</b></li> <li>Linkage 0</li> <li>MessageHeader</li> <li>OperationOutcome</li> <li>Parameters 5 <b>N</b></li> <li>Subscription 3</li> <li>UserSession 0</li> </ul>
	<b>Individuals</b> <ul style="list-style-type: none"> <li>Patient 5 <b>N</b></li> </ul>	<b>Entities</b> <ul style="list-style-type: none"> <li>Organization 3</li> </ul>	<b>Workflow</b> <ul style="list-style-type: none"> <li>Task 2</li> </ul>	<b>Management</b> <ul style="list-style-type: none"> <li>Encounter 2</li> </ul>	

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Further down the same page we see other resources – note especially those in the Left most column

### Individuals

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son 2  
oup 1

### Entities

- Organization 3
- OrganizationRole 0
- HealthcareService 2
- Endpoint 2
- Location 3
- Substance 2
- BiologicallyDerivedProduct 0
- Device 2
- DeviceComponent 1
- DeviceMetric 1

### Workflow

- Task 2
- Appointment 3
- AppointmentResponse 3
- Schedule 3
- Slot 3
- ProcessRequest 2
- ProcessResponse 2

### Management

- Encounter 2
- EpisodeOfCare 2
- Flag 1
- List 1
- Library 2



# Finally the resources that constitute the guts of the clinical record (I highlighted a few- note that observation is the most mature )

Summary	Diagnostics	Medications	Care Pro
<ul style="list-style-type: none"> <li>• AllergyIntolerance 3</li> <li>• AdverseEvent 0</li> <li>• Condition (Problem) 3</li> <li>• Procedure 3</li> <li>• FamilyMemberHistory 2</li> <li>• PhysicalImpression 0</li> <li>• OccupationalData 0</li> <li>• PendingIssue 1</li> </ul>	<ul style="list-style-type: none"> <li>• <b>p</b> Observation 5 <b>N</b></li> <li>• Media 1</li> <li>• DiagnosticReport 3</li> <li>• Specimen 2</li> <li>• BodyStructure 1</li> <li>• ImagingStudy 3</li> <li>• QuestionnaireResponse 3</li> <li>• Sequence 1</li> </ul>	<ul style="list-style-type: none"> <li>• MedicationRequest 3</li> <li>• MedicationAdministration 2</li> <li>• MedicationDispense 2</li> <li>• MedicationStatement 3</li> <li>• Medication 3</li> <li>• Immunization 3</li> <li>• ImmunizationEvaluation 0</li> <li>• ImmunizationRecommendation 1</li> </ul>	<ul style="list-style-type: none"> <li>• CarePlan 2</li> <li>• CareTeam</li> <li>• Goal 2</li> <li>• ServiceRequest</li> <li>• NutritionOrder</li> <li>• VisionPrescription</li> <li>• RiskAssessment</li> <li>• RequestGroup</li> </ul>




## What you will see in diagnostic report and observations are test and measurements such as the following

<https://build.fhir.org/resourcelist.html>

Concept	Example	Where to find
<b>Clinical Findings</b>		
Laboratory Results	Blood panels such as CBC with Differential, Liver Panel, etc.	DiagnosticReport with Observations
Imaging Study Findings	CT Scans, MRI, Plain Radiographs, Ultrasounds)	DiagnosticReport (some with Observations)
Diagnostic Test Results	EKG, pulmonary function test, EEG	Observations (and maybe a DiagnosticReport)
Vital Signs	Temperature, Blood Pressure, Heart Rate, Respiratory Rate	Observation
Other Physical Exam Findings	Auscultation findings	Observation
Pulmonary Artery Catheter readings	Pulmonary artery pressure	Observation


Click on Observations to learn how to explore any resource. Note the five tabs. (<https://build.fhir.org/observation.html>)

Home Getting Started Documentation Resources Profiles Extensions Operations Terminologies

 Diagnostics > **Observation**

**Content** Examples Detailed Descriptions Mappings Profiles & Extensions Operations R2 Conversions

## 10.1 Resource Observation - Content

Orders and Observations  Work Group Maturity Level: 5 Normative Compartments: Device, Encounter, Patient, Pr

Normative Candidate Note: This page is candidate normative content for R4 in the [Observation Package](#). Once normative, it will lose it's [R4](#) status and no longer be made.

Measurements and simple assertions made about a patient, device or other subject.

**Note to balloters** The Orders and Observations work-group wants to draw the attention of reviewers and implementers to the following resource:

1. The [guidance](#) on using code value pairs to represent observations in FHIR





## Content tab – a good one

- This one includes lots of narrative descriptions and a structured hierarchy of the fields (attributes) of in the file. Read the text but don't wrestle with the hierarchy on the first pass.
- The example tab shows JASON and XML examples of real observations. Depending on the resource examples and the examples may rich in number and variety or not. Don't start there

### Observation-example-f001-glucose

Orders and Observations Work Group	Maturity Level: N/A	Ballot Status: Informative	Compartments: Device, Encounter, Patient, Practitioner, RelatedPerson
------------------------------------	---------------------	----------------------------	---

This is the narrative for the resource. See also the [XML](#) or [JSON](#) format. This example conforms to the [profile Observation](#).

#### Generated Narrative with Details

**id:** f001

**identifier:** 6323 (OFFICIAL)

**status:** final

**code:** Glucose [Moles/volume] in Blood (Details : {LOINC code '15074-8' = 'Glucose [Moles/volume] in Blood', given as 'Glucose [Moles/volume] in Blood'})

**subject:** [P. van de Heuvel](#)

**effective:** Apr 2, 2013 9:30:10 AM --> (ongoing)



## Resource – Observation

<http://hl7.org/fhir/observation.html>

### Resource Observation - Content

Observations <a href="#">Work Group</a>	Maturity Level: 5	Trial Use	Compartments: Device, Encounter, Patient, Practitioner, RelatedPerson
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Observations are simple assertions made about a patient, device or other subject.

### Scope and Usage

Observation is an *event resource* from a FHIR workflow perspective - see [Workflow](#).

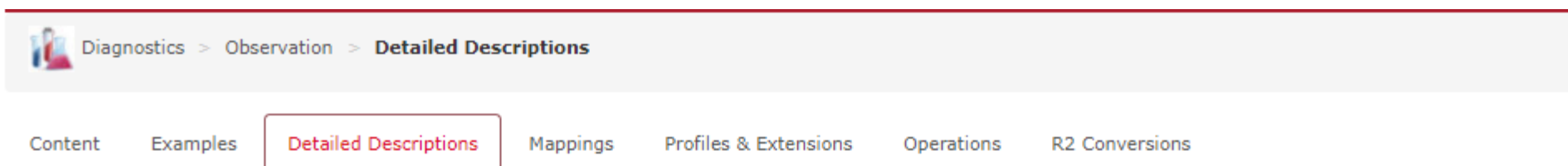
Observations are a central element in healthcare, used to support diagnosis, monitor progress, determine baselines and patterns and even capture demographic characteristics. Observations are simple name/value pair assertions with some metadata, but some observations group other observations together logically, or even are multi-conditional. Note that the [DiagnosticReport](#) resource provides a clinical or workflow context for a set of observations and the Observation resource is referenced by the DiagnosticReport to represent lab, imaging, and other clinical and diagnostic data to form a complete report.

Observation resource include:

- Observations such as [body weight](#), [blood pressure](#), and [temperature](#)
- Observations of Laboratory Data like [blood glucose](#), or an [estimated GFR](#)
- Observations of test results like [bone density](#) or fetal measurements
- Observations of Measurements such as [EKG data](#) or [Pulse Oximetry data](#)
- Observations of assessment tools such as [APGAR](#) or a [Glasgow Coma Score](#)
- Observations of characteristics: such as [eye-color](#)
- Observations of history like tobacco use, family support, or cognitive status
- Observations of characteristics like pregnancy status, or a death assertion

## Detailed descriptions tab (<https://build.fhir.org/observation-definitions.html>)

- For learning about a given observation, this is the best tab to dwell on
- It lists each field by name, gives its data type and explains what it contains. Once you have negotiated a given resource, the pattern will be the same for all other resources – Nice thing about FHIR



Diagnostics > Observation > Detailed Descriptions

Content Examples **Detailed Descriptions** Mappings Profiles & Extensions Operations R2 Conversions

### 10.1.8 Resource Observation - Detailed Descriptions

Orders and Observations [Work Group](#) Maturity Level: 5 Normative Compartments: Device, Encounter, Patient, Practitioner, RelatedPerson

Detailed Descriptions for the elements in the Observation resource.

Observation	
Element Id	Observation
Definition	Measurements and simple assertions made about a patient, device or other subject.
Control	1..1
Requirements	Observations are a key aspect of healthcare. This resource is used to capture those that do not require more sophisticated mechanisms.
Aliases	USML Class: Measurement; Result; Test

## Some observation fields

### Observation.code

**Observation.code**  
 Observation.code  
 Describes what was observed. Sometimes this is called the observation "name".

← Identifies the observation

**Observation.code**  
 Observation.code  
 Describes what was observed. Sometimes this is called the observation "name".  
 Control: 1..1  
 Terminology: LOINC Codes (Example)  
 Binding: CodeableConcept  
 Requirements: Knowing what kind of observation is being made is essential to understanding the observation.

**Observation.code**  
 Observation.code  
 Describes what was observed. Sometimes this is called the observation "name".  
 Alternate Names: Name  
 Summary: true  
 Comments: All code-value and, if present, component.code-component.value pairs need to be taken into account to correctly understand the meaning of the observation.

### Observation.subject

**Observation.subject**  
 Observation.subject  
 The patient, or group of patients, location, or device whose characteristics (direct or indirect) are described by the observation and into whose record the observation is placed.  
 Comments: Indirect characteristics may be those of a specimen, fetus, donor, other observer (for example a relative or EMT), or any observation made about the subject.

← Subject usually the patient

**Observation.subject**  
 Observation.subject  
 The patient, or group of patients, location, or device whose characteristics (direct or indirect) are described by the observation and into whose record the observation is placed.  
 Control: 0..1  
 Binding: Reference(Patient | Group | Device | Location)  
 Requirements: Observations have no value if you don't know who or what they're about.

**Observation.subject**  
 Observation.subject  
 The patient, or group of patients, location, or device whose characteristics (direct or indirect) are described by the observation and into whose record the observation is placed.  
 Comments: Indirect characteristics may be those of a specimen, fetus, donor, other observer (for example a relative or EMT), or any observation made about the subject.  
 Summary: true  
 Comments: One would expect this element to be a cardinality of 1..1. The only circumstance in which the subject can be missing is when the observation is made by a device that does not know the patient. In this case, the observation SHALL be matched to a patient through some context/channel matching technique, and at this point, the observation should be updated  
 If the actual focus of the observation is different than the subject, the focus element may be used. However, the distinction between the patient's own value for an observation versus that of the fetus, or the donor or blood product unit, etc., are often specified in the observation code.

### Observation.focus

**Observation.focus**  
 Observation.focus  
 This element has a standards status of "Trial Use" which is different to the status of the whole resource



true

**value[x]**

Observation.value[x]

The information determined as a result of making the observation, if the information has a simple value.

..1

[Quantity](#)|[CodeableConcept](#)|[string](#)|[boolean](#)|[integer](#)|[Range](#)|[Ratio](#)|[SampledData](#)|[time](#)|[dateTime](#)|[Period](#)

See [Choice of Data Types](#) for further information about how to use [x]

An observation exists to have a value, though it might not if it is in error, or if it represents a group of observations.

true

An observation may have; 1) a single value here, 2) both a value and a set of related or component values, or 3) only a set of related or component values.

The datatype for this element should be determined by Observation.code. A CodeableConcept with just a text would be used instead of a string if the field was

type associated with the Observation.code defines a coded value. For additional guidance, see the [Notes section](#) below.

**Affect this element**

**bs-7:** If Observation.code is the same as a Observation.component.code then the value element associated with the code SHALL NOT be present ([expression](#): Observation.component.code.where( (coding.code = %resource.code.coding.code) and (coding.system = %resource.code.coding.system)).empty(), xpath: not(f:\*[system='value']) and (for \$coding in f:code/f:coding return f:component/f:code/f:coding[f:code/@value=\$coding/f:code/@value] [f:system/@value=\$coding/f:system/@value])).

**dataAbsentReason**

Observation.dataAbsentReason

Provides a reason why the expected value in the element Observation.value[x] is missing.

..1

[DataAbsentReason](#) (Extensible)

[CodeableConcept](#)

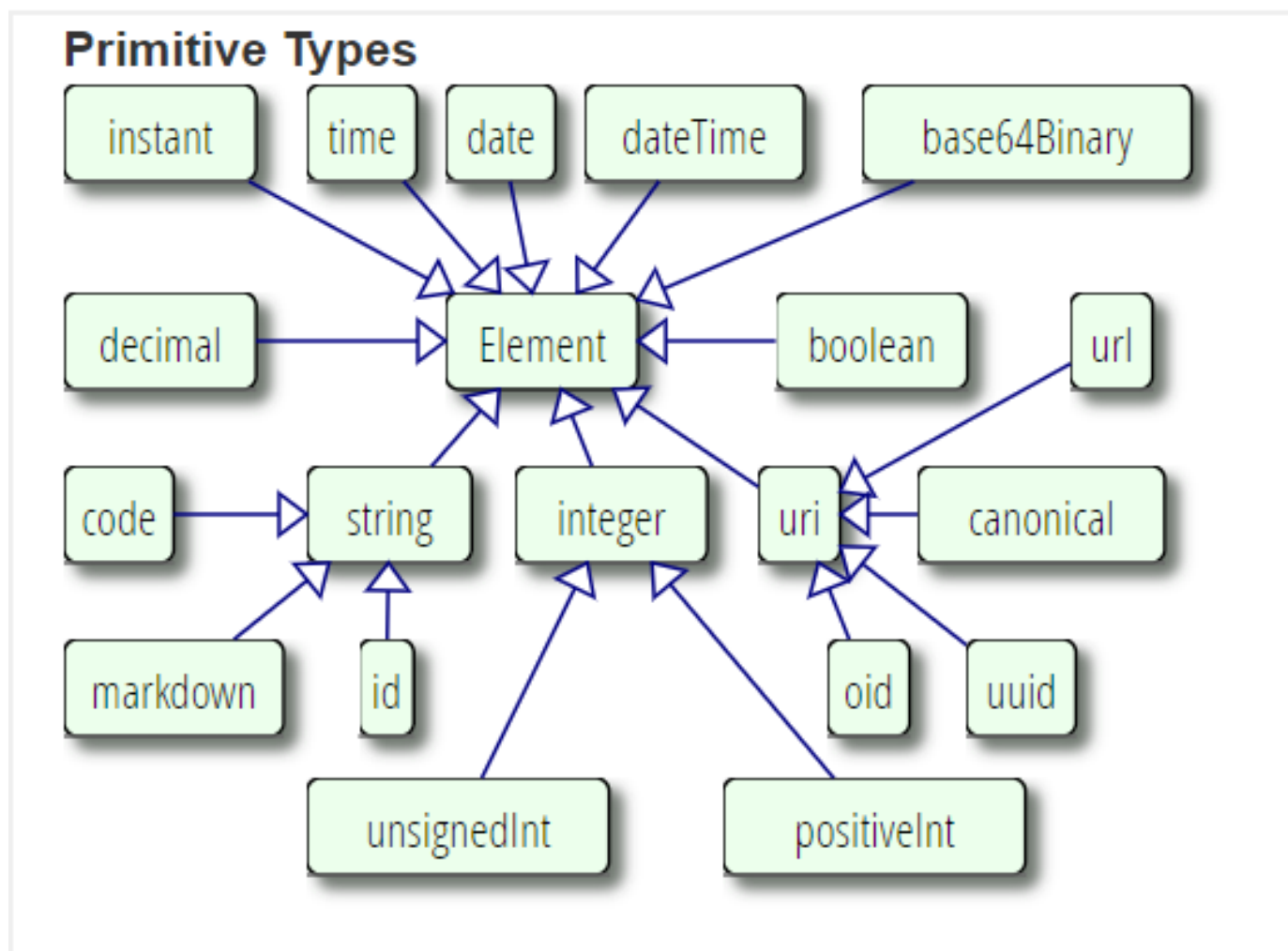
For many results it is necessary to handle exceptional values in measurements.

The value of the observation – the data of the observation. See possibilities in list.

Reason why a value might be missing

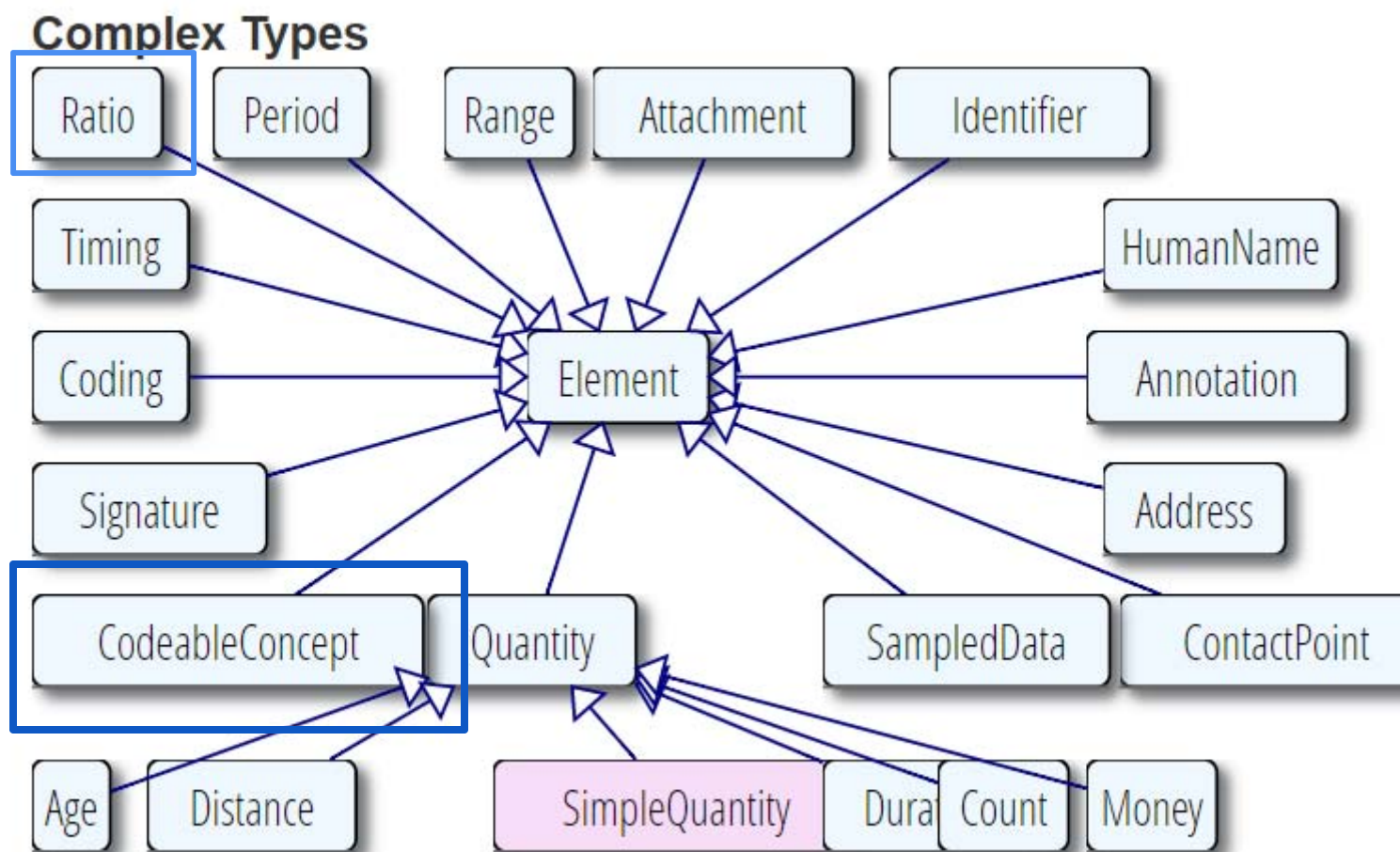
## FHIR Data types (<https://build.fhir.org/datatypes.html>)

### Primitive data types





## Complex FHIR data types





## Specialized connected sets of observations

- We (LHNCBC) have been developing specifications for reporting genetic test results in a structured fashion. The first was for V2 and approved by ballot late 2017 as part of the general Laboratory Result Interface – along with Newborn screening, also born in LHNCBC
- Now we are working in the FHIR workgroup to create a parallel specification in FHIR.
- Lloyd, who is the lead on this project, has created UML diagrams to show the relationships between specific observations needed to support FHIR reporting of structured genetic reports. These distinct observations are all defined by LOINC terms. This UML diagram is a nice way to see the relationships, and you may see them associated with other resources. Will show just one of the pages of the UML diagram

(<https://docs.google.com/document/d/1juWEnjyXV34yYmPq3FDpLAIJIM0Hiv0FyNBfvPD6enM/edit#heading=h.fk5kmv4ghxne>)



Class 2-sequencing

*Computable Genetic Finding*  
**Variation**  
*(any type)*

**Complex Variant 81251-1**

- valueCodeableConcept
- component(complex-var-type) 81263-6 [0..1]
- component(complex-var-code) 81260-2 [0..1]
- component(complex-var-name) 81262-8 [0..1]

hasMember  
 ↓  
 /0..\*

**Described Variant (Discrete or Structural)**

- method (81304-8 variant analysis method type) [0..1]
- valueCodeableConcept(Genetic Variant Assessment) 69548-6 [0..1]
- component(dna-chg) 48004-6 [0..1]
- component(dna-chg-type) 48019-4 [0..1]
- component(variation-code) 81252-9 [0..1]
- component(dbSNP-ID) 81255-2 [0..1]
- component(genomic-dna-chg) 81290-9 [0..1]
- component(genomic-source-class) 48002-0 [0..1]
- component(amino-acid-chg) 48005-3 [0..1]
- component(amino-acid-chg-type) 48006-1 [0..1]
- component(transcript-ref-seq) 51958-7 [0..1]
- component(genomic-ref-seq) 48013-7 [0..1]
- component(allelic-frequency) 81258-6 [0..1]
- component(allelic-phase) 8120-7 [0..1]
- component(allelic-phase-basis) 82309-6 [0..1]
- component(allelic-read-depth) 82121-5 [0..1]
- component(zygosity/allelic-state) 53034-5 [0..1]
- component(copy-number) 82155-3 [0..1]
- component(arrCGH-ratio) 81299-0 [0..1]
- component(variant-length) 81300-6 [0..1]
- component(outer-start-end) 81301-4 [0..1]
- component(inner-start-end) 81302-2 [0..1]
- component(specimen-source) 48002-0 [0..1]

**Legend**

- Observation
- Other class
- Outside Profile
- Profile for diagram only
- High-priority



## Why I like FHIR – a Contrast

### cda Obligation Policy Security Observation

[Observation: templateId 2.16.840.1.113883.3.445.14]

*This template is constrains the Security Observation to specify a "obligation policy code". This template reuses the SecurityObservation implementing the HL7 Healthcare Security Classification (HCS) standard.*

1. **SHALL** contain exactly one [1..1] templateId ( CONF-CD-14 ) such that it
  - a. **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.3.445.14"
2. **SHALL** conform to *cda Security Observation* template (templateId: 2.16.840.1.113883.3.445.21) (CONF:16828)
3. **SHALL** contain exactly one [1..1] code (CONF:14841)/@code="SECCONOBS" *Security Control* (CodeSystem: 2.16.840.1.113883.1.11.20457 SecurityObservationTypeCodeSystem) (CONF:14886)
4. **SHALL** contain exactly one [1..1] value (CONF:9136), where the @code **SHOULD** be selected from ValueSet HL7 ObligationPolicyCode 2.16.840.1.113883.1.11.20445 **STATIC** (CONF:9137)
  - *This attribute specifies a type of obligation policy, specifically.*



### cda Obligation Policy Security Observation example

```
<observation classCode="OBS" moodCode="EVN">
  <!-- Security Observation -->
  <templateId root="2.16.840.1.113883.3.445.21"
    assigningAuthorityName="HL7 CBCC"/>
  <!-- Obligation Policy Code template -->
  <templateId root="2.16.840.1.113883.3.445.14"
    assigningAuthorityName="HL7 CBCC"/>
  <code code="SECCONOBS"
    codeSystem="2.16.840.1.113883.1.11.20457"
    displayName="Security Classification"
    codeSystemName="HL7 SecurityObservationTypeCodeSystem"/>
  <!-- Value set constraint "2.16.840.1.113883.1.11.20445" -->
  <value xsi:type="CE" code="ENCRYPT"
    codeSystem="2.16.840.1.113883.5.1063"
    codeSystemName="SecurityObservationValueCodeSystem"
    displayName="Encrypt information">
    <originalText>Information must be encrypted</
originalText>
  </value>
</observation>
```



## Summary

- In theory, FHIR could be used for any application, but it is tuned for healthcare and research applications. And there are miles to go to finish the healthcare side before the FHIR leaders sleep.
- I have emphasized a relatively static data storage and retrieval but FHIR extends to many dynamic features from real time data collection to Structured Data Capture (SDC). (Another area where LHNCBC scientists are active in the development of the SDC specification and a variety of tools for providing support for data capture, including the generation of live SDC forms from the form definition, and autocomplete entry of data from external coding systems). (<https://lhc-forms.lhc.nlm.nih.gov>)

# LHC-Forms Example

- Save To File
- Use "Label Above" Style
- Use "Label on Left" Style
- Show HL7 Message

Display Question Code
  Show Help/Description
  Keyboard Navigation On Input Fields
 Total # of Questions: 44

## Personal Health Record

### Medical Conditions

Medical condition	Status	Started	Stopped	Description/Comment
Chest pain	Active	04/20/2016	MM/DD/YYYY	Sounds anginal. Worrse with exertion, but young and no family history
Pneumonia - bronchial	Inactive	03/17/2017	04/22/2016	Treated wish Zpack on ambulatorybais
Hay fever (allergic rhinitis)	Active	03/20/2012	MM/DD/YYYY	Every spring
bac	Select one or t	MM/DD/YYYY	MM/DD/YYYY	Type a value

**Add another 'Medical Conditions'**

### Medications

Medication name	Status	Strength	Instructions	Started	Stopped	Why stopped	Resupply
Z-PAK (Pack)	Stopped	mixed Pack	take until gone	03/17/2016	04/22/2016	Finished the prescription	MM/DD/YYYY
Beclomethasone (Nasal)	Active	40 mcg/puff Metered dose sp	1 puff twice day in season	03/20/2012	MM/DD/YYYY	Select one or type a value	MM/DD/YYYY

**Add another 'Medications'**

### Allergies and Other Dangerous Reactions

Name	Reaction	Started	Comment
Pollen	Sneezing or stuffy nose	03/15/2017	Worse when maple trees bloom
Select one or type a value	Select one or type a value	MM/DD/YYYY	Type a value

**Add another 'Allergies and Other Dangerous Reactions'**